

ABSTRACT OF THE DISCLOSURE

A method and apparatus for use with a motor controller that receives a command velocity and that applies voltages to drive a motor at the command velocity, the apparatus comprising a dual inertia lost motion assembly including a motor and a load couplable to the motor, the lost motion assembly characterized by at least some lost motion between the motor and the load, the motor and load together characterized by a total assembly inertia, an acceleration error determiner for generating an acceleration error that is the difference between a derivative of the command velocity and a motor acceleration value and a low pass acceleration error filter filtering the acceleration error and having a gain set as a percentage of the total assembly inertia, the acceleration error filter providing the filtered signal to the controller, the controller using the filtered signal to adjust the applied voltages.